CLAIMS

What is claimed is:

1. An adenovirus vector comprising an intron and a heterologous transgene wherein said intron is located 5' to the heterologous transgene, and wherein said vector is capable of expressing greater levels of the heterologous transgene than a comparable adenovirus vector comprising a heterologous transgene and lacking an intron 5' to said heterologous transgene.

2. The adenovirus vector of claim 1, wherein said vector is mammalian or avian.

3. The adenovirus vector of claim 2, wherein mammalian includes human, non-human primate, bovine, porcine, canine, or ovine.

4. The adenovirus vector of claim 2, wherein said vector is bovine adenovirus vector.

5. The adenovirus vector of claim 4, wherein said bovine adenovirus vector is a member of subgroup 1 bovine adenovirus or subgroup 2 bovine adenovirus.

6. The adenovirus vector of claim 4, wherein said bovine adenovirus vector is BAV3.

7. The adenovirus vector of claim 1, wherein said transgene encodes a eucaryotic or procaryotic protein.

8. The adenovirus vector of claim 7 wherein said transgene encodes a therapeutic protein or polypeptide; a growth hormone or other growth enhancer; or a protein capable of eliciting an immune response.

9. The adenovirus vector of claim 7, wherein said transgene encodes a protein from a pathogen.

10. The adenovirus vector of claim 9, wherein said protein is an RNA viral protein.

11. The adenovirus vector of claim 9 wherein said protein is a DNA viral protein.

12. The adenovirus vector of claim 9, wherein said protein is a bacterial protein.

13. The adenovirus vector of claim 9, wherein said protein is a protein from a parasite.

14. The adenovirus vector of claim 1, wherein said intron is a mammalian intron.

15. The adenovirus vector of claim 1, wherein said transgene is operably linked to a control region and said intron is located 3' to said control region.

16. The adenovirus vector of claim 1, wherein said vector is replication-competent.

17. The adenovirus vector of claim 1, wherein said vector is replication-defective.

18. A composition comprising a vector according to claim 1.

19. The composition of claim 18 further comprising a pharmaceutically acceptable excipient.

20. A host cell comprising the vector of claim 1.

21. A recombinant adenovirus comprising the vector of claim 1.

22. A method of preparing an adenovirus vector comprising an intron and a heterologous transgene wherein said intron is located 5' to said heterologous transgene, said method comprising the steps of obtaining an adenovirus vector and inserting a transgene and an intron into said vector, wherein said intron is inserted 5' to said heterologous transgene.

23. The method of claim 22 wherein said adenovirus vector has a deletion in a gene essential for replication.

24. The method of claim 23 wherein said gene essential for replication is E1.

25. A method of preparing an adenovirus comprising the adenovirus vector of claim 1, comprising the steps of culturing a mammalian host cell comprising the adenovirus vector of claim 1 under conditions suitable for adenovirus replication and packaging; and optionally recovering said adenovirus produced.

26. The method according to claim 25 wherein said adenovirus has a deletion in a gene essential for replication and said method further comprises the step of culturing said mammalian host cell in the presence of a helper cell line which comprises said gene essential for replication.

27. The method of claim 26 wherein said gene essential for replication is E1.

28. An immunogenic composition comprising an adenovirus vector of claim 9.

29. An immunogenic composition comprising an adenovirus vector of claim 10.

30. An immunogenic composition comprising an adenovirus vector of claim 11.

31. An immunogenic composition comprising an adenovirus vector of claim 12.

32. An immunogenic composition comprising an adenovirus vector of claim 13.

33. A composition capable of inducing an immune response in a mammalian subject, said composition comprising the immunogenic composition of claim 28.

34. The composition according to claim 33 further comprising a pharmaceutically acceptable excipient.

35. A method of treating or ameliorating the symptoms of a RNA viral infection in a mammalian host comprising administering to said host a therapeutically effective amount of the immunogenic composition of claim 29.

36. A method of treating or ameliorating the symptoms of a DNA viral infection in a mammalian host comprising administering to said host a therapeutically effective amount of the immunogenic composition of claim 30.

37. A method of treating or ameliorating the symptoms of a bacterial infection in a mammalian host comprising administering to said host a therapeutically effective amount of the immunogenic composition of claim 31.

38. A method of treating or ameliorating the symptoms of a parasitic infection in a mammalian host comprising administering to said host a therapeutically effective amount of the immunogenic composition of claim 32.